

EXPRESS MAILING NO. EK748827497US

GG119-1US.ST25
SEQUENCE LISTING

<110> Risinger, Carl

Andersson, Maria K.

Lewander, Tommy

Olaissou, Erik

<120> Detection of CYP2D6 Polymorphisms

<130> GG119.1US

<150> GB 0021286.0

<151> 2000-08-30

<160> 77

<170> PatentIn version 3.1

<210> 1

<211> 9432

<212> DNA

<213> homo sapiens

<400> 1

| | |
|---|-----|
| gaattcaaga ccagcctgga caacttggaa gaacccggtc tctacaaaaa atacaaaatt | 60 |
| agctgggatt ggggtgcgggtg gctcatgcct ataatcccag cactttggga gcctgaggtg | 120 |
| ggtggatcac ctgaagtcag gagttcaaga ctagcctggc caacatgggtg aaaccctatc | 180 |
| tctactgaaa atacaaaaag ctagacgtgg tggcacacac ctgtaatccc agctacttag | 240 |
| gaggctgagg caggagaatt gcttgaagcc tagaggtgaa ggttgtagtg agccgagatt | 300 |
| gcatcattgc acaatggagg ggagccacca gcctgggcaa caagaggaaa tctccgtctc | 360 |
| caaaaaaaaa aaaaaaaaaa aaagaattag gctgggtggt gcctgtagtc ccagctactt | 420 |
| gggaggcagg gggtcactt gatgtcgaga ctgcagttag ccatgatcct gccactgcac | 480 |

GG119-1US.ST25

tccggcctgg gcaacagagt gagaccctgt ctaaagaaaa aaaaaataaa gcaacatatc 540
ctgaacaaag gatcctccat aacgttccca ccagatttct aatcagaaac atggaggcca 600
gaaagcagtg gaggaggacg accctcaggc agcccgggag gatgttgtca caggctgggg 660
caagggcctt cgggctacca actgggagct ctgggaacag ccctgttgca aacaagaagc 720
catagcccg ggcagagcca ggaatgtggg ctgggctggg agcagcctct ggacaggagt 780
gggtcccatcc aggaacctc cggcatggct gggaaagtggg gtacttggtg ccgggtctgt 840
atgtgtgtgt gactggtgtg tgtgagagag aatgtgtgcc ctaagtgtca gtgtgagtct 900
gtgtatgtgt gaattattgtc tttgtgtggg tgattttctg cgtgtgtaat cgtgtccctg 960
caagtgtgaa caagtggaca agtgtctggg agtggaacag agatctgtgc accatcaggt 1020
gtgtgcatag cgtctgtgca tgtcaagagt gcaaggtgaa gtgaaggagc caggcccatg 1080
atgccactca tcatcaggag ctctaaggcc ccaggtaagt gccagtgaca gataagggtg 1140
ctgaagggtca ctctggagtg ggcagggtggg ggtagggaaa gggcaaggcc atgttctgga 1200
ggaggggttg tgactacatt aggggtgatg agcctagctg ggaggtggat ggccgggtcc 1260
actgaaaccc tggttatccc agaaggcttt gcaggcttca ggagcttgga gtggggagag 1320
gggggtgactt ctccgaccag gcccctccac cggcctaccc tgggtaaggg cctggagcag 1380
gaagcagggg caagaacctc tggagcagcc catacccgcc ctggcctgac tctgccactg 1440
gcagcacagt caacacagca ggttactca cagcagaggg caaaggccat catcagctcc 1500
ctttataagg gaagggtcac gcgctcgggtg tgctgagagt gtcctgcctg gtcctctgtg 1560
cctggtgggg tgggggtgcc aggtgtgtcc agaggagccc atttggtagt gaggcaggta 1620
tggggctaga agcactgggtg cccctggccg tgatagtggc catcttcctg ctctggtgg 1680
acctgatgca ccggcgccaa cgctgggctg cacgctaccc accaggcccc ctgccactgc 1740
ccgggctggg caacctgctg catgtggact tccagaacac accatactgc ttcgaccagg 1800
tgagggagga ggtcctggag ggcggcagag gtgctgaggc tcccctacca gaagcaaaca 1860
tggtggtgg gtgaaaccac aggctggacc agaagccagg ctgagaaggg gaagcagggt 1920
tgggggacgt cctggagaag ggcatttata catggcatga aggactggat tttccaaagg 1980
ccaaggaaga gtagggcaag ggcctggagg tggagctgga cttggcagtg ggcattgcaag 2040
cccattgggc aacatatgtt atggagtaca aagtcccttc tgctgacacc agaaggaaag 2100
gccttgggaa tggaagatga gttagtctg agtgccgttt aaatcacgaa atcgaggatg 2160
aaggggtgac agtgaccgg ttcaaacctt ttgactgtg ggtcctcggg cctcactgcc 2220
tcaccggcat ggaccatcat ctgggaatgg gatgctaact ggggcctctc ggcaattttg 2280
gtgactcttg caaggtcata cctgggtgac gcatccaaac tgagttcctc catcacagaa 2340
gggtgtgacc ccacccccgc cccacgatca ggaggctggg tctcctcctt ccacctgctc 2400

GG119-1US.ST25

actcctggta gccccggggg tcgtccaagg ttcaaataagg actaggacct gtagtctggg 2460
 gtgacccctgg cttgacaaga ggccctgacc ctccctctgc agttgcggcg ccgcttcggg 2520
 gacgtgttca gcctgcagct ggccctggacg ccggtggctg tgctcaatgg gctggcgggc 2580
 gtgcgcgagg cgctggtgac ccacggcgag gacaccgccg accgcccgcc tgtgcccac 2640
 acccagatcc tgggttttcg gccgcgttcc caaggcaagc agcgggtggg acagagacag 2700
 atttccgtgg gacccgggtg ggtgatgacc gtagtccgag ctgggcagag agggcgcggg 2760
 gtcgtggaca tgaaacaggc cagcgagtgg ggacagcggg ccaagaaacc acctgcacta 2820
 gggaggtgtg agcatgggga cgaggcgggg gcttgtgacg agtgggcggg gccactgccg 2880
 agacctggca ggagcccaat gggtagcgt ggcgcatthc ccagctggaa tccggtgtcg 2940
 aagtgggggc ggggaccgca cctgtgctgt aagctcagt tgggtggcg gggggccgcg 3000
 ggggtcttccc tgagtgcaa ggcggtcagg gtgggcagag acgaggtggg gcaaagcctg 3060
 cccagccaa gggagcaagg tggatgcaca aagagtgggc cctgtgacca gctggacaga 3120
 gccagggact gcgggagacc agggggagca tagggttgga gtgggtgggt gatggtgggg 3180
 ctaatgcctt catggccacg cgcacgtgcc cgtcccaccc ccaggggtgt tccctggcgcg 3240
 ctatggggcc gcgtggcgcg agcagaggcg cttctccgtg tccaccttgc gcaacttggg 3300
 cctgggcaag aagtcgctgg agcagtgggt gaccgaggag gccgcctgcc tttgtgccgc 3360
 cttcgccaac cactccgtg ggtgatgggc agaagggcac aaagcgggaa ctgggaaggc 3420
 gggggacggg gaaggcgacc cttacccgc atctcccacc cccaggacgc ccctttcgcc 3480
 ccaacggtct cttggacaaa gccgtgagca acgtgatcgc ctccctcacc tgcgggcgcc 3540
 gcttcgagta cgacgacct cgcttctca ggctgctgga cctagctcag gagggactga 3600
 aggaggagtc gggctttctg cgcgaggtgc ggagcgagag accgaggagt ctctgcaggg 3660
 cgagctcccg agaggtgccg gggctggact ggggcctcgg aagagcagga tttgcataga 3720
 tgggtttggg aaaggacatt ccaggagacc ccactgtaag aagggcctgg aggaggaggg 3780
 gacatctcag acatggtcgt gggagagggtg tgcccggtc agggggcacc aggagaggcc 3840
 aaggactctg tacctcctat ccacgtcaga gatttcgatt ttaggtttct cctctgggca 3900
 aggagagagg gtggaggctg gcacttgggg agggacttgg tgaggtcagt ggtaaggaca 3960
 ggcaggccct gggctctacct ggagatggct ggggcctgag acttgtccag gtgaacgcag 4020
 agcacaggag ggattgagac cccgttctgt ctggtgtagg tgctgaatgc tgtccccgtc 4080
 ctctgcata tccagcgct ggctggcaag gtcctacgct tccaaaaggc tttcctgacc 4140
 cagctggatg agctgctaac tgagcacagg atgacctggg acccagccca gccccccga 4200
 gacctgactg aggccttcct ggcagagatg gagaaggtga gagtggctgc cacggtgggg 4260

GG119-1US.ST25

T06230"01E24660

| | | | | | | |
|-------------|-------------|------------|-------------|------------|-------------|------|
| ggcaaggggtg | gtgggttgag | cgtcccagga | ggaatgaggg | gaggctgggc | aaaaggttg | 4320 |
| accagtgc | cacccggcga | gccgcatctg | ggctgacagg | tgcagaattg | gaggtcattt | 4380 |
| gggggctacc | ccgttctgtc | ccgagtatgc | tctcggccct | gctcaggcca | aggggaaccc | 4440 |
| tgagagcagc | ttcaatgatg | agaacctg | catagtgg | gctgacctgt | tctctgccg | 4500 |
| gatggtgacc | acctcgacca | cgctggcctg | gggcctcctg | ctcatgatcc | tacatccgga | 4560 |
| tgtgcagcgt | gagcccatct | gggaaacagt | gcaggggccg | agggaggaag | ggtacaggcg | 4620 |
| ggggcccatg | aactttgctg | ggacacccgg | ggctccaagc | acaggcttga | ccaggatcct | 4680 |
| gtaagcctga | cctcctccaa | cataggaggc | aagaaggagt | gtcagggccg | gaccccttg | 4740 |
| gtgctgacct | attgtgggga | cgcatgtctg | tccaggccgt | gtccaacagg | agatcgacga | 4800 |
| cgtgataggg | caggtgcggc | gaccagagat | gggtgaccag | gctcacatgc | cctacaccac | 4860 |
| tgccgtgatt | catgaggtgc | agcgctttgg | ggacatcg | cccctgggtg | tgacccatat | 4920 |
| gacatcccg | gacatcgaag | tacagggtct | ccgcatccct | aaggtaggcc | tggcgccctc | 4980 |
| ctaccccg | ctcagcacca | gcacctgg | atagccccag | catggctact | gccagggtgg | 5040 |
| cccactctag | gaaccctggc | cacctagtcc | tcaatgccac | cacactgact | gtccccactt | 5100 |
| gggtgggggg | tccagagtat | aggcagggt | ggcctgtcca | tccagagccc | ccgtctagt | 5160 |
| gggagacaaa | ccaggacctg | ccagaatgtt | ggaggacca | acgcctgcag | ggagaggggg | 5220 |
| cagtgtgggt | gcctctgaga | ggtgtgactg | cgccctgctg | tggggctcga | gaggggtactg | 5280 |
| tggagcttct | cgggcgcagg | actagttgac | agagtccagc | tgtgtgccag | gcagtgtgtg | 5340 |
| tccccgtgt | gtttggtggc | aggggtccca | gcacccctaga | gtccagtccc | cactctcacc | 5400 |
| ctgcatctcc | tgcccaggga | acgacactca | tcaccaacct | gtcatcggtg | ctgaaggatg | 5460 |
| aggccgtctg | ggagaagccc | ttccgcttcc | accccgaaaca | cttcctggat | gcccaggggc | 5520 |
| actttgtgaa | gccggaggcc | ttcctgcctt | tctcagcagg | tgctgtggg | gagcccggt | 5580 |
| ccctgtcccc | ttccgtggag | tcttgagg | gtatcaccca | ggagccaggc | tactgacgc | 5640 |
| ccctcccctc | cccacaggcc | gccgtgcatg | cctcggggag | cccctggccc | gcatggagct | 5700 |
| cttcctcttc | ttcacctccc | tgctgcagca | cttcagcttc | tcggtgcca | ctggacagcc | 5760 |
| ccggcccagc | caccatgggtg | tctttgcttt | cctggtgagc | ccatccccct | atgagctttg | 5820 |
| tgctgtgccc | cgctagaatg | gggtacctag | tccccagcct | gctccctagc | cagaggctct | 5880 |
| aatgtacaat | aaagcaatgt | ggtagttcca | actcgggtcc | cctgctcacg | ccctcggttg | 5940 |
| gatcatcctc | ctcagggcaa | ccccaccct | gcctcattcc | tgcttacccc | accgcctggc | 6000 |
| cgcatttgag | acaggggtac | gttgaggctg | agcagatgtc | agttaccctt | gcccataatc | 6060 |
| ccatgtcccc | cactgaccca | actctgactg | cccagattgg | tgacaaggac | tacattgtcc | 6120 |
| tggcatgtgg | ggaagggggc | agaatgggct | gactagaggt | gtcagtcagc | cctggatgtg | 6180 |

GG119-1US.ST25

gtggagaggg caggactcag cctggaggcc catatttcag gcctaactca gcccacccca 6240
 catcaggggac agcagtcctg ccagcaccat cacaacagtc acctcccttc atatatgaca 6300
 ccccaaaacg gaagacaaat catggcggtca gggagctata tgccagggct acctacctcc 6360
 cagggtcag tcggcagggt ccagaacggt ccctgggaag gcccacatgga agcccaggac 6420
 tgagccacca ccctcagcct cgtcacctca ccacaggact ggctacctct ctggggccctc 6480
 agggatgctg ctgtacagac ccctgaccag tgacgagttc gcactcaggg ccaggctggc 6540
 gctggaggag gacacttggt tggctccaac cctaggtacc atcctcccag tagggatcag 6600
 gcagggccca caggcctgcc ctagggacag gagtcaacct tggaccata aggcactggg 6660
 gcgggcagag aaggaggagg tggcatgggc agctgagagc cagagaccct gaccctagtc 6720
 cttgctctgc cattaccccg tgtgaccccg ggcccaccct tccccaccct tccccacccc 6780
 gggcttctgt ttcttctgca caacgagaag gctgcttcac ctgccccgag tcctgtcttc 6840
 ctgctctgcc ttctggggct gtggcccttg ctggcctgga gcccaccca agggcagggg 6900
 ctgctgtcct ccacgtctgt cctcaccgac ataattgggt gggctgggca cacaggcagt 6960
 gcccagagt ttctaattgag catatgatta cctgagtcct gggcagacct tcttagggaa 7020
 cagcctggga cagagaacca cagacactct gaggagccac cctgaggcct cttttgccag 7080
 aggaccctac agcctccctg gcagcagttc cgccagcatt tctgtaaatg ccctcatgcc 7140
 aggggtgcggc ccggctgtca gcacgagagg gacgttggtc tgtcccctgg caccgagtca 7200
 gtcagaaggg tggccagggg ccccttgggg ccctccagag acaatccact gtggtcacac 7260
 ggctcgggtg caggaagtgc tgttcctgca gctgtgggga cagggagtggt ggatgaagcc 7320
 aggctgggtt tgtctgaaga cggaggcccc gaaagggtggc agcctggcct atagcagcag 7380
 caactcttgg atttattgga aagattttct tcacggttct gagtcttggg ggtgttagag 7440
 gctcagaacc agtccagcca gagctctgtc atgggcacgt agaccgggtc ccagggcctt 7500
 tgctctttgc tgtcctcaga ggcctctgca aagtagaaac aggcagcctt gtgagtcccc 7560
 tcctgggagc aaccaaccct ccctctgaga tgccccgggg ccaggtcagc tgtggtgaaa 7620
 ggtagggatg cagccagctc agggagtggt ccagagttcc tgcccaccca aggaggctcc 7680
 caggaagggtc aaggcacctg actcctgggc tgcttcctc ccctcccctc cccaggtcag 7740
 gaagggtggga aagggtctgg gtgtctgtga ccctggcagt cactgagaag cagggtggaa 7800
 gcagccccct gcagcacgct gggtcagtgg tcttaccaga tggatacgca gcaacttcct 7860
 tttgaacctt tttattttcc tggcaggaag aagagggatc cagcagtgag atcaggcagg 7920
 ttctgtgttg cacagacagg gaaacaggct ctgtccacac aaagtcggtg gggccaggat 7980
 gaggcccagt ctgttcacac atggctgctg cctctcagct ctgcacagac gtcctcgctc 8040

GG119-1US.ST25

ccctgggatg gcagcttggc ctgctggtct tgggggttgag ccagcctcca gcactgcctc 8100
 cctgccctgc tgccctccac tctgcagtgc tccatggctg ctcagttgga cccacgctgg 8160
 agacgttcag tcgaagcccc gggctgtcct tacctcccag tctgggggtac ctgccacctc 8220
 ctgctcagca ggaatggggc taggtgcttc ctcccctggg gacttcacct gctctccctc 8280
 ctgggataag acggcagcct cctccttggg ggcagcagca ttcagtcctc caggtctcct 8340
 gggggctcgtg acctgcagga ggaataagag ggcagactgg gcagaaaggc cttcagagca 8400
 cctcatcctc ctgttctcac actgggggtg cacagtcctg ggaagtctt ccttttcagt 8460
 tgagctgtgg taaccttgtg agtttcttgg agggggcctg ccactaccct tgggactccc 8520
 tgccgtgtgt ctgggtctaa ctgagctctg aaaggagaga gcccagccc tgggccttcc 8580
 aggggaagcc ttacctcaga ggttggttc ttcctactct tgactttgcg tctctgcaga 8640
 gggaggtggg aggggtgaca caaccctgac acccacacta tgagtgatga gtagtcctgc 8700
 cccgactggc ccatcctttc caggtgcagt cccccttact gtgtctgcca aggggtgccag 8760
 cacagccgcc cactccagg ggaagaggag tgccagccct taccacctga gtgggcacag 8820
 tgtagcattt attcattagc cccacactg gcctgaccat ctcccctgtg ggctgcatga 8880
 caaggagaga gaacaggctg aggtgagagc tactgtcaac acctaaacct aaaaaatcta 8940
 taattgggct gggcaggggtg gctcacgcct gtaatcccag cactttggga ggccgagatg 9000
 ggtggatcac ctgaggtcag atgttcgaga ccagcctggc caacatgggtg aaaccccgtc 9060
 tctactaaaa atacaaaaaa ttagctgggc gtggtggtgg gtgcctgtaa tcccagctac 9120
 tcaggaggct gaggcaggag aattgcttga acctgggagg cagaggctgc agtgagccga 9180
 gatcgcatca ttgactcca gcctgggtcaa caagagtga actgtcttaa aaaaaaatc 9240
 tataattgat atcttttaga agataaaact ttgcattcat gaaataagaa taggagggtc 9300
 taaaataaaa atgttcaaac acccaccacc actaattctt gacaaaaata tagtctgggt 9360
 gccttagctc atgcctgtaa tcccagcatt ttgggaggct aaggcaggag gattgtttga 9420
 gcctaggaat tc 9432

<210> 2

<211> 1680

<212> DNA

<213> homo sapiens

<400> 2

gaattcaaga ccagcctgga caacttgga gaaccsggtc tctacaaaaa atacaaaatt 60
 agctgggatt ggggtgcggtg gctcatgcct ataatcccag cactttggga gcctgagggtg 120

GG119-1US.ST25

ggtggatcac ctgaagtcag gagttcaaga ctagcctggc caacatggtg aaaccctatc 180
 tctactgaaa atayaaaaag ctagacgtgg tggcacacac ctgtaatccc agctacttag 240
 gaggctgagg caggagaatt gcttgaagcc tagaggtgaa gggtgtagtg agccgagatt 300
 gcatcattgc acaatggagg ggagccacca gcctgggcaa caagaggaaa tctccgtctc 360
 caaaaaaaaa aaaaaaaaaa aaagrattag gctgggtggt gcctgtagtc ccagctactt 420
 gggaggcagg ggggtccactt gatgtcgaga ctgcagttag ccatgatcct gccactgcac 480
 tccggcctgg gcaacagagt gagaccctgt ctaaagaaaa aaaaaataaa gcaacatatc 540
 ctgaacaaag gatcctccat aacgttccca ccagatttct aatcagaaac atggaggcca 600
 gaaagcagtg gaggaggacr accctcaggc agcccgggag gatgttgtca caggctgggg 660
 caagggcctt ccggctacca actgggagct ctgggaacag ccctgttgca aacaagaagc 720
 catagcccgg ccagagccca ggaatgtggg ctgggctggg agcagcctct ggacaggagt 780
 ggtcccatcc aggaaacctc cggcatggct ggggaagtggg gtacttggtg ccgggtctgt 840
 atgtgtgtgt gactggtgtg tgtgagagag aatgtgtgcy ctaagtgtca gtgtgagtct 900
 gtgtatgtgt gaatattgtc tttgtgtggg tgattttctg crtgtgtaat cgtgtccctg 960
 caagtgtgaa caagtggaca agtgtctggg agtggacaag agatctgtgc accatcagggt 1020
 gtgtgcatag cgtctgtgca tgtcaagagt gcaaggtgaa gtgaaggac caggcccatg 1080
 atgccactca tcatcaggag ctctaaggcc ccaggtaagt gccagtgaca gataagggtg 1140
 ctgaagggtca ctctggagtg ggcagggtggg ggtagggaaa gggcaaggcc atgttctgga 1200
 ggaggggttg tgactacatt aggggtgtatg agcctagctg ggaggtggat ggccrggtcc 1260
 actgaaacc tggttatccc agaaggcttt gcaggcttca ggagcttgga gtggggagag 1320
 ggggtgactt ctccgaccag gcccctccac cggcctaccc tgggtaaggg cctggagcag 1380
 gaagcagggg caagaacctc tggagcagcc cataccgcc ctggcctgac tctgccactg 1440
 gcagcacagt caacacagca ggttactca cagcagaggg caaaggccat catcagctcc 1500
 ctttataagg gaaggggtcac gcgctcgggtg tgctgagagt gtcctgcctg gtcctctgtg 1560
 cctggtgggg tgggggtgcc aggtgtgtcc agaggagccc atttgtagt gaggcaggta 1620
 tggggctaga agcactggtg cccctggccg tgatagtggc catcttcctg ctctggtgg 1680

<210> 3

<211> 11

<212> DNA

<213> Artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 3

gaaccggtc t

11

<210> 4

<211> 13

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 4

aaaatacaaa aag

13

<210> 5

<211> 13

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 5

aaaaagaatt agg

13

<210> 6

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 6

aggacgaccc t

11

<210> 7

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 7

tgtgccctaa g

11

<210> 8

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 8

tctgcgtgtg t

11

<210> 9

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 9

tggccgggtc c

11

<210> 10

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 10

gaaccgggtc t

11

<210> 11

<211> 13

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 11

aaaatataaa aag

13

<210> 12

<211> 13

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 12

aaaaaggatt agg

13

<210> 13

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 13

aggacaaccc t

11

<210> 14

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 14

tgtgctctaa g

11

<210> 15

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 15

tctgcatgtg t

11

<210> 16

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 16

tggccaggtc c

11

<210> 17

<211> 23

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 17

aaatacaaaa ttagctggga ttg

23

<210> 18

<211> 21

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 18

gagacggaga tttcctcttg t

21

<210> 19

<211> 18

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 19

ccttccggct accaactg

18

<210> 20

<211> 20

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 20

ttgcagggac acgattacac

20

<210> 21

<211> 21

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 21

taagggtgct gaaggtcact c

21

<210> 22

<211> 18

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 22

gggctgctcc agaggttc

18

<210> 23

<211> 20

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 23

ccaggttaagt gccagtgaca

20

<210> 24

<211> 20

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 24

agctcctgaa gcctgcaaag

20

<210> 25

<211> 18

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 25

gccagagccc aggaatgt

18

<210> 26

<211> 18

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 26

gccttgccct ttcctac

18

<210> 27

<211> 19

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 27

agaaacatgg aggccagaa

19

GG119-1US.ST25

<210> 28

<211> 19

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 28

gtttcctgga tgggaccac

19

<210> 29

<211> 22

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 29

agcctagagg tgaaggttgt ag

22

<210> 30

<211> 17

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 30

cttgccccag cctgtga

17

<210> 31

<211> 25

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 31

aaaaaataca aaattagctg ggatt

25

<210> 32

<211> 21

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 32

tttttttttg gagacggaga t

21

<210> 33

<211> 23

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 33

ttctttagac aggtctcac tct

23

<210> 34

<211> 19

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 34

gggcaacaag aggaaatct

19

<210> 35

<211> 19

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 35

gcctggacaa cttggaaga

19

<210> 36

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 36

agaccgggtt c

11

<210> 37

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 37

agaccgggtt c

11

<210> 38

<211> 13

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 38

ctttttgtat ttt

13

<210> 39

<211> 13

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 39

ctttttatat ttt

13

<210> 40

<211> 13

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 40

cctaattcctt ttt

13

<210> 41

<211> 13

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 41

cctaattcctt ttt

13

<210> 42

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 42

agggtcgtcc t

11

<210> 43

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 43

agggttgtcc t

11

<210> 44

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 44

cttaggcac a

11

<210> 45

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 45

cttagagcac a

11

<210> 46

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 46

acacacgcag a

11

<210> 47

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 47

acacatgcag a

11

<210> 48

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 48

ggacccggcc a

11

<210> 49

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 49

ggacctggcc a

11

<210> 50

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 50

acttggaaga a

11

<210> 51

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 51

tctactgaaa a

11

<210> 52

<211> 25

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 52

ccaaaaaaaaa aaaaaaaaaa aaaag

25

<210> 53

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 53

agtggaggag g

11

<210> 54

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 54

agagaatgtg t

11

<210> 55

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 55

ggtgattttc t

11

GG119-1US.ST25

<210> 56

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 56

gaggtggatg g

11

<210> 57

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 57

ttcttccaag t

11

<210> 58

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 58

ttttcagtag a

11

<210> 59

<211> 25

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 59

cttttttttt tttttttttt tttgg

25

<210> 60

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 60

cctcctccac t

11

<210> 61

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 61

acacattctc t

11

<210> 62

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 62

agaaaatcac c

11

GG119-10S.ST25

<210> 63

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 63

ccatccacct c

11

<210> 64

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 64

ttttgtagag a

11

<210> 65

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 65

cgtctagctt t

11

<210> 66

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 66

caccagcct a

11

<210> 67

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 67

gctgcctgag g

11

<210> 68

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 68

cactgacact t

11

<210> 69

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 69

acacgattac a

11

<210> 70

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 70

gtttcagtgg a

11

<210> 71

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 71

tctctacaaa a

11

<210> 72

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 72

aaagctagac g

11

<210> 73

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 73

taggctgggt g

11

<210> 74

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 74

cctcaggcag c

11

<210> 75

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 75

aagtgtcagt g

11

<210> 76

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 76

tgtaatcgtg t

11

GG119-10S.ST25

<210> 77

<211> 11

<212> DNA

<213> artificial sequence

<220>

<223> synthetic oligonucleotide

<400> 77

tccactgaaa c

11